At page 4, paragraph 5 of the Official Action, Claims 7-8 and 16 have been rejected as being obvious over a combination of Heinz et al, Marek et al, and Nakamura et al (US Patent No. 6, 339, 203).

At page 4, paragraph 6 of the Official Action, Claims 11 and 19 have been rejected as being obvious over Marek et al and Taniguchi et al (US Patent No. 6, 337, 456).

Claim 1 is the only independent claim pending in the present patent application. Accordingly, the prior art rejection of the claims will be argued only with respect to independent claim 1. If this claim is allowed, the remaining dependent claims 2-20 will be allowable, at least for the same reasons as parent independent claim 1.

As noted above, independent claim 1 has been rejected only as being obvious over a combination of the Heinz et al and Marek et al references. The Official Action assumes that Heinz et al discloses the claimed electrode carriers, two spindles, and a motor. As the motor is supposed to drive the two spindles, it is regarded as a servomotor. The Official Action further states that independent claim 1 does not explicitly state that both electrode arms of the welding apparatus defined by Applicant's independent claim 1 move in a linear motion.

Heinz et al is discussed as background information in Applicant's Specification which states that Heinz et al discloses an electric motor, a mounting plate, and two spindles. However, Applicant's Specification expressly notes that the electrode arms disclose by Heinz et

al are only rotatable, and not linearly movable, as required by the welding apparatus defined by independent claim 1.

More specifically, independent claim 1 expressly recites "...electrode carriers...together with the drive unit form an assembly which is mounted in a floating position on at least one linear guide...". Thus, the electrode arms are linearly movable together with the drive unit (i.e., the servormotor).

Additionally, independent claim 1 expressly recites that the "...servomotor...can be used to drive two spindles (8, 14) which are provided with opposing screw threads, are arranged parallel to the linear guide and engage with nuts assigned to the electrode carriers (6, 12)." Therefore, since the electrode arms are coupled both to the linear guide and the spindles arranged parallel thereto, a linear movement of the electrode arms is, at the least, implicitly claimed since the recited parallel relationship requires linearity.

Marek et al may disclose linearly movable electrode arms. However, there is no teaching or suggestion in the disclosure of Marek et al of a configuration as expressly recited in independent claim 1 in which both "...electrode carriers which can be moved relative to one another by a drive unit, ... together with the drive unit form an assembly which is mounted in a floating position on at least one linear guide..." On the contrary, in the device disclosed by Marek et al, a first electrode arm is mounted on a first linear guide and is movable relative to a second electrode arm rigidly mounted with respect to the first linear guide. Both the first and

the second electrode arms, and the first linear guide, are mounted together to a second linear guide allowing for movements of an assembly formed by the first and second electrode arms, and the first linear guide.

In addition to the above, Marek et al does not disclose the positively recited feature of the welding apparatus defined by independent claim 1 of"...the drive unit being formed by a servomotor (9), which can be used to drive two spindles (8, 14) which are provided with the opposing screw threads, that are arranged parallel to the linear guide and engage with nuts assigned to the electrode carriers (6, 12)."

The Official Action states that Figure 4 of Marek et al shows "...two electrode arms mounted on a linear guide 27 with a spring[s] 63 and will compensate for some weight of the welding gun as described in paragraph [0107]". Thus, the Official Action contends that Marek et al teaches the spring to allow the base, which is attached to a welding arm, to be released and moved for welding. The Official Action concludes, from this disclosure of Marek et al, that this reference can be combined with Heinz et al.

Applicant respectfully disagrees with the Examiner's conclusion. The spring 63 disclosed by Marek et al does not serve as means for compensating for the weight of the assembly, which assembly is mounted in a floating position on at least one linear guide, as recited in independent claim 1. The spring 63 of Marek et al also does not provide that the assembly is "...held in a base position, from which the electrode carriers (6, 12) can be transferred to the

welding position...", as expressly recited in independent claim 1. On the contrary, Marek et al discloses that a bolt being pressurized by the spring locks the linear guide which is actually held at a joint. The spring according to Marek et al merely helps lock and unlock the bolt, and thereby the linear guide.

Assuming arguendo that the spring disclosed by Marek et al does compensate for weight, it does not compensate for the weight of an "assembly" formed from "...two electrode carriers...together with the drive unit..." [emphasis added] as defined by independent claim 1. On the contrary, the spring disclosed by Marek et al would merely compensate for the weight for the first linear guide together with one electrode arm attached thereto, assuming arguendo that Marek et al does, in fact, compensate for any weight.

Applicant respectfully submits, as a result of the diverse disclosures of the Heinz et al and Marek et al references, there is clearly no teaching or suggestion in the prior art itself, or to a person of ordinary skill in the relevant art, to combine these references in any manner rendering independent claim 1 obvious. The teachings of both the Heinz et al and Marek et al references are directed to different generic types of welding tongs, namely an "X" – type tong with rotating arms and a tong with arms moving parallel, respectively, during welding operations, clearly contrary to the welding apparatus disclosed and claimed by Applicant. Moreover, the rotating (i.e., circular) movements of the electrode arms of the device disclosed by Heinz et al results in disadvantages which the welding apparatus of the present invention seeks to avoid. See, the discussion of Heinz et al at page 1, line 12 through page 2, line 2, of

Applicants' Specification. One disadvantage of electrodes driven by spindles and moving in a circular path is bending loads within the spindles which promote wear of the spindle mechanism. Another disadvantage, particularly when welding metal sheets of different thickness, is that there is assurance that the contact surfaces between the metal sheets and the electrodes remain constant, since circular moving electrodes abut against sheets with different thicknesses at different angles.

As a result of these disadvantages, and in view of the different types of devices disclosed by Heinz et al and Marek et al, a person skilled in the relevant art would not consider the teaching of Heinz et al when attempting to eliminate the disadvantages resulting from rotating welding tongs. There is clearly no suggestion or motivation to combine the applied references, as proposed in the Official Action, to reject independent claim 1.

Even if the two applied references could be combined, this would not result in the device defined by independent claim 1. On the contrary, a combination of Heinz et al and Marek et al suggests mounting a welding tong comprising rotatably movable electrode arms driven by a servomotor on a linear guide allowing for vertical movement of the entire tong. However, such combination would not result in an assembly comprising the servomotor and the two electrode carriers "mounted in a floating position", as expressly recited in independent claim 1, nor would such combination result in "...means for compensating for its weight" by which "...the electrode carriers (6, 12) can be transferred to the welding position...", as also expressly recited in independent claim 1.

By having two electrode arms mounted to a single linear guide together with a single motor in a floating manner, which together form an assembly, the weight of which is compensated by respective means, the welding apparatus defined by independent claim 1 results in the significant advantage over the prior art of spontaneously adjusting to different thicknesses of metal sheets. This facilitates automatically eliminating bending stresses in a manner not disclosed, suggested or recognized by the prior art. As a result of the significant differences between the disclosures of the two applied prior art references, and that of the welding apparatus defined by independent claim 1, the only basis for combining the two applied references to reject independent claim 1 must be derived from using Applicant's own disclosure as a guide for selectively combining different portions of the different prior art references to reconstruct independent claim 1 by hindsight, which is improper as a matter of law.

It is well established that references cannot be combined to reject a claim in the absence of a suggestion or motivation in the prior art itself, or within the common knowledge of a person of ordinary skill in the relevant art. See, for example, Micro-Chemical Co., Inc. v. Great Plains Chemical Co. Inc., 41 USPQ 2d 1238 (Fed. Cir. 1997) In re Fritch, 23 USPQ 2d 1780 (Fed. Cir. 1992). Moreover, it is improper to use an Applicant's own disclosure as a guide for modifying/combining different portions of different prior art references to reconstruct a claim by hindsight. See, for example, Orthopedic Equipment Co. v. United States, 217 USPQ 193 (Fed. Cir. 1993). In the instant case, there is clearly no suggestion or motivation in the prior art itself

to modify/combine the two applied prior art references as a result of the diverse teachings the two applied prior art references, as compared to the device defined by independent claim 1, when all positively recited features of the claim are considered in the patentability determination. Since neither of the two applied prior art references discloses the specific structure and structural arrangement defined by independent claim 1, or recognizes the functional advantages resulting from the structure and structural arrangement defined by independent claim 1, the only basis for combining the references (if, in fact, the references can even be combined) to reject the claim must be derived from using Applicant's own disclosure as a guide for the selective combination/modification of different portions of the two applied references. However, a rejection based on such hindsight reconstruction of a rejected claim is improper as a matter of law.

Since the specific structure and structural arrangement and functional advantages resulting directly from the structural arrangement of the welding apparatus defined by independent claim 1 are not taught or recognized by the diverse teachings of the two applied prior art references, the welding apparatus defined by independent claim 1 is not a mere substitution of known elements disclosed by the prior art to achieve predictable results. KSR International Co.,v. Teleflex Inc., 82 USPQ 2d 1385 (2007). On the contrary, the welding apparatus defined by independent claim 1 positively recites structure and structural arrangement, which are not disclosed or suggested by the applied prior art, but are contrary to the teachings of the applied prior art, resulting in functional advantages not contemplated or recognized by either of the two applied prior art references.

For the reasons discussed herein, Applicant respectfully submits that independent claim 1 is in condition for allowance over the two applied prior art references. The remaining dependent claims 2-20, which depend directly or indirectly from independent claim 1 and include all features of that claim, are allowable, at least for the same reasons as parent independent claim 1.

Applicant respectfully submits that this application is in condition for allowance, and favorable action is respectfully requested.

Respectfully submitted,

Mark P. Stone
Registration No. 27, 954
Attorney for Applicant
50 Broadway
Hawthorne, NY 10532
914-769-1106